REMARKS

Claims

Claims 1 through 40 are pending in this Application. New Claims 41 through 55 have been added by this Amendment.

Abstract of the Disclosure

Applicant has deleted the Abstract of the Disclosure and has replaced the same with the following Abstract of the Disclosure:

> -- A data card is shown. The data card includes a non-magnetic substrate selected from the group consisting of a glass substrate, a glass-ceramic substrate, crystallized glass substrate, an aluminum substrate, a ceramic substrate, a carbon substrate, a silicon substrate and a resin substrate, which substrate, in the preferred embodiment, has a first edge and second edge. A data storage surface region is located on the substrate between the first edge and the second edges. The data surface

region includes a magnetic storage medium. A data unit having a combination of a data card and a data card reader is also shown. A method for reading a data storage card is also shown.--

Specification

The Specification has been amended beginning at line 19 and ending at Line 24, at Page 8 as discussed above, to provide an antecedent basis for the claim that non-magnetic substrates include, but is not limited to glass substrates, crystallized glass substrates; aluminum substrates, ceramic substrates, carbon substrates, silicon substrates, resin substrates. All of these materials are set forth throughout the specifications and resin material is specifically disclosed at line 19, Page 9 of the specification. As such, no new matter has been added by this Amendment.

Claim Objections

The Examiner Objected to Claims 4, 5, 38 and 39.

The following amendments were made to overcome the objections.

Claim 4 and 5 each at line 2, the word "lest" was replaced with --least--.

Claim 38, line 8, the "." has been deleted and replaced with a --;-- located at the end of the amendatory language --magnetic * * * therefrom;--;

Claim 39, line 1, the words "In a" have been deleted and replaced with --A-- to read A method;

Claim 39, line 6 has been amended by the "a" preceding the word --glass--; and

Claim 39, line 6 the word "material" has been replaced with the word --substrate-- such that the reference is now to --glass substrate--.

With the above amendments, the objections to Claims 4, 5, 38 and 39 have been overcome.

Claim Rejections - 35 USC Section 112

The Examiner objected to Claims 6-10, 13-15, 21-24, 27, 38 and 40 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

This rejection has been overcome by amending the claims as follows:

Claim 6 at line 2 has been amended to delete the word "said" and to replace the same with the article --a-- such that the term is now referred to as --a data processing station.

Claim 7 has been amended at line 2 to delete the word "said" and to replace the same with the article --a-- such that the term is now referred to as --a data processing station.

Claim 8 has been amended at line 2 to the word "said" and to replace the same with the article --a-- such that the term is now referred to as --a data processing station.

Claim 9 at line 3 has been amended to delete the words "storage device" and to replace the same with the words -- surface region-- such that the term is now referred to as a -- data storage region--, an antecedent basis for which exists in claim 1.

Claim 10 at line 3 has been amended to delete the words "storage device" and to replace the same with the words --surface region-- such that the term is now referred to as a --data storage region--, an antecedent basis for which exists in claim 1.

Claim 13 has been amended at line 2 to delete the word "said" and to replace the same with the article --a-- such that the reference is now to --a protective coating--.

Claim 14 has been amended by deleting at lines 2 and 3 the words "and said protective coating*** said to surfaces" and at line 5 the word "said" has been deleted and replaced with the article --a-- such that the reference is now to --a protective coating--.

Claim 15 has been amended at line 1 to delete the word "said" and to replace the same with the article --a-- such that the reference is now to --a protective coating--.

Claim 21 has been amended at line 2 by deleting the words "thin film" such that the reference is now to --at least one layer of high density, coercivity magnetic layer-- an antecedent basis for which is in Claim 11.

Claim 22 has been amended at line 2 by deleting the words "thin film" such that the reference is now to --at least one layer of high density, coercivity magnetic layer-- an antecedent basis for which is in Claim 11.

Claim 23 has been amended at line 2 by deleting the words "thin film" such that the reference is now to --at least one layer of high density, coercivity magnetic layer-- an antecedent basis for which is in Claim 11.

With respect to the rejection of claim 27, Applicant has proceeded as follows. Claim 25 has been amended at line 6 to insert after the word "station" the words --having a transducer--. Thus, claim 27, which is dependant on claim 26 which in turn is dependant on claim 25 now provides an antecedent basis for the term --said transducer--.

Claim 38 has been amended at line 7 to delete the words "magnetic layer" and to replace the same with the words --magnetically coercive material--, an antecedent basis which exists at line 4 in claim 38.

Claim 40 has been amended at line 10 to delete the word "said" and to replace the same with the article --a-- such that the reference is to --a transducer--.

With the above Amendments to the claims, the Examiner's rejection of claims 6-10, 13-15, 21-24, 27, 38 and 40 under 35 USC 112, second paragraph have been overcome.

Claim Rejections-35 USC Section 103

The Examiner rejected claims 1, 2, and 6-40 under 35 USC 1039(a) as being unpatentable over Kanbe et al (US 6,080,476).

Applicant respectfully traverses this rejection for several important reasons.

Kanbe et al at column 7 lines 66 and 67 and column 8 lines 1-5 characterizes the magnetic recording system utilizing the proprietary magnetic recording medium as follows:

> This magnetic recording system is a magnetic recording system having a well-known structure comprising a magnetic head 1, a head access system 2 for driving a magnetic head 1, a right/read signal processing means 3 for such magnetic head 1, a magnetic recording medium 4 and a driving unit 5 for rotating the magnetic recording medium 4.

Figures 3A, 3B and 4 of Kanbe et al discloses a closed environment, multiple disk hard disk drive wherein the magnetic

recording medium 4 is protected from an outer environment exterior to the magnetic recording system. The reason for the structure of Kanbe et al is to insure that particles and debris from the environment exterior to the magnetic recording system is restricted so as to prohibit the same from coming into contact with the surface region of the magnetic recording medium 4. Since the recording density of the magnetic recording medium 4 is greater than 2 gigabits [Kanbe et al, column 9 line 54], introduction of particles and debris onto the surface of the magnetic recording medium 4 would cause the magnetic recording system to crash.

The present invention discloses a data storage card which is intended to be used in an environment wherein particles and debris may become affixed to the surface region of the data storage device. In the present invention, the data storage device and surface region is capable of having such particles and debris removed therefrom prior to the data storage card and a data processing station being moved relative to each other.

Without question Kanbe et al does not anticipate, disclose, suggest or teach removing the magnetic recording medium 4 from

the enclosed environment for use in external environment.

In cases where the magnetic recording medium 4 is removable, an envelope or housing is typically used to enclose the magnetic recording medium to insure that particles and debris do not come in contact therewith.

In order to sharply distinguish and claim the present invention from Kanbe et al, claims 1, 11, 13, 14, 25, 28, 30, 35, 37, 39 and 40 have been amended to utilize the following amendatory language of claim 1 or an appropriate variation thereof.

> said data surface region being configured to be used in an environment wherein particles and debris may become fixed to the data storage region and said data storage region is capable of having such particles and debris removed therefrom.

The Examiner's attention is directed to the specification at lines 16 through 23 on page 13 which clearly discloses and discuss the use of a data surface region 26 which preferably is a magnetic region as being used in an environment as described above.

Since the substrate could be formed of any non-magnetic material as described in the specification, the word "glass" has been deleted from claim 1 in that use of a glass substrate per se would be unduly restrictive and does not affect the invention based on the prior art or distinguish patentability over the prior art.

The protective coating is selected of a material to permit the particles and debris to be removed therefrom prior to the data surface region being accessed by a data head. This is discussed in the specification at lines 22 through 24 at page 14. An example of such a protective coating is one which is smooth and resistant to abrasion such as, for example, a protective coating formed by sputtering by carbon. This is discussed in the specification at lines 21 through 24 at page 13.

Lastly, and most importantly, Kanbe et al discloses a magnetic recording medium in the form of a disk which is rotated in a closed environment and such a structure does not anticipate, disclose, suggest or teach a magnetic recording

medium which functions as a data storage card or its equivalent as disclosed in the specification.

With respect to claims 7, 17, 21, 22, 23, 28, 29, 30 and 38, Applicant is not relying on the specific structure referenced by the Examiner for patentability but is relying upon a novel and unique data storage card, portable data storage card, combination of such cards and card writer/reader system utilizing such cards and a method for reading such a card with a card reader and a magnetic signal processing apparatus for processing such a card and a method for processing magnetic signals from such a card is novel and unique, all as disclosed and claimed therein.

With respect to the Examiner's rejection of claims 3-5 under 35 USC 103(a) as being unpatentable under Kanbe et al (US 6080,476) in view of Hashimoto et al (US 4,756,967), the arguments set forth above with respect to the rejection of the claims over Kanbe et al under Section 103(a) above as applied to claims 1, 2 and 6-40 are also applicable to this rejection.

Again, Applicant respectfully disagrees with the Examiner's characterization that Kanbe et al discloses a magnetic recording

medium that may be in a form of a data storage card. The present data storage card is used in an environment other then disclosed by Kanbe et al. Further, Applicant is not relying on a magnetic recording medium having a layer of magnetic material formed of nickel-cobalt, per se, for patentability. Claims 3-5 are dependent claims and are being used to vary the scope of what Applicant believes to be an allowable independent claim.

Information Disclosure Statement

being filed concurrently with this Amendment

In connection with a patent search report received on a related PCT Application, the PCT search located three (3) references which are considered pertinent to this invention. Accordingly, Applicant has concurrently filed an Information Disclosure Statement together with one (1) sheet on form PTO-1449 LIST OF PRIOR ART SIGNED BY APPLICANT and has paid the fee therefor. Copies of the citations are enclosed with the Information Disclosure Statement.

With respect to United States Patent 3,838,252 referenced in the Information Disclosure Statement, Applicant has the following comments. United States Patent 3,838,252 relates to a

standard, well-known low-density storage credit card having a magnetically encoded stripe. The magnetically encoded stripe is protected from abrasion and wear by a vinyl polymer coating.

In essence, United States Patent 3,838,252 discloses applying an ultra-thin coating of vinyl polymer over the magnetic stripe over a standard credit card to protect the same. There is no disclosure, suggestion or teaching that the protective coating be configured on a high density, high coercive magnetic material layer so as to easily allow particles and debris to be removed therefrom prior to moving the data storage relative to a reader.

European Patent Application Publication No. 0 194 675 discloses a protective layer for a magnetic recording medium which is used in a magnetic disk drive system to prevent wear when magnetic head contacts the magnetic recording medium.

Japanese Published Application (abstract) 10041118 discloses dispersing in a magnetic coating a hydrogenating magnetic powder to enhance the characteristics of he recording layer.

None of the above-cited art anticipates, discloses, suggests or teaches the data storage card and related apparatus as disclosed in the claims therein.

Applicant has reviewed the other prior art cited of record and not relied upon by the Examiner and agrees that the prior art is pertinent to Applicant's disclosure and does not anticipate, disclose, suggest or teach the data storage card, apparatus and methods as disclosed in claims therein.

New Claims 41 through 55

New claims 41 through 55 have been added by the Amendment. Independent claims 41 through 52 claim a data storage card in substantially the same format as claim 1, as amended and related to dependent claims.

Method claims 53 through 55 claim a method for reading a card subject of essentially of the subject matter of claims 41 through 52.

New claims 41 through 55 are deemed patentable over the above referenced cited art including the art cited by applicant for the same reasons set forth above.

Summary

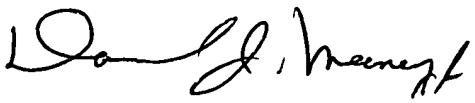
For all of the reasons set forth above, the rejection of the claims 1 through 40, as amended, under 35 U.S.C. 112, second paragraph, and under 35 U.S.C. 103(a) over the cited art has been overcome. Further, the subject matter of new claims 41 through 55 are likewise believed to define patentable subject matter for the reasons set forth above.

The Examiner is respectfully requested to issue a Notice of Allowability and a formal Notice of Allowance.

If the Examiner determines that allowable subject matter is present but has further objections to the claim language such that further modification to the claim language would overcome such objections of the Examiner, the Examiner is respectfully

requested to call the undersigned for the purposes of conducting a phone interview so that agreement may be reached on wording acceptable to the Examiner.

Respectfully submitted,



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SERIAL NO:	09/663,658	) GROUP ART UNIT
FILED:	SEPTEMBER 15, 20000	) 2876
FOR:	DATA STORAGE CARD HAVING A GLASS SUBSTRATE AND DATA SURFACE REGION AND METHOD FOR USING SAME	) EXAMINER APRIL A NOWLIN

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT OF THE DISCLOSURE

The Abstract of the Disclosure has been amended as follows:

Delete the present Abstract of the Disclosure and replace with the following new Abstract of the Disclosure:

-- A data card is shown. The data card includes a non-magnetic substrate selected from the group consisting of a glass substrate, a glass-ceramic substrate, crystallized glass substrate, an aluminum substrate, a ceramic substrate, a carbon substrate, a silicon substrate and a resin substrate, which substrate, in the preferred embodiment, has a first edge and second edge. A data storage surface region is

located on the substrate between the first edge and the second edges. The data surface region includes a magnetic storage medium. A data unit having a combination of a data card and a data card reader is also shown. A method for reading a data storage card is also shown.

IN THE SPECIFICATION

Paragraph beginning at line 19 and ending at line 24 of Page 8 has been amended as follows:

In the data card of the present invention, it is envisioned that an appropriate non-magnetic substrate may be used for practicing this invention. Typical of such non-magnetic substrates include, but is not limited to, glass substrates, crystallized glass substrates, aluminum substrates, ceramic substrates, carbon substrates, silicon substrates, resin substrate and the like.

Resin material as a substrate is disclosed at line 19, page 9 of the specification

IN THE CLAIMS

Claims 1, 7, 10-16, 18 and 19 have been amended as follows:

1. (Amended) A data storage card comprising

a [glass] substrate having first and second edge;

a data surface region located on said [glass] substrate between said first and second edges, said data surface region comprising a magnetic storage medium having at least one layer of high density, high coercivity magnetic material for storing magnetic signals, said data surface region being configured to be used in an environment wherein particles and debris may become affixed to the data surface region and said data surface region is capable of having such particles and debris removed therefrom.

2. The date storage card of claim 1 wherein said at least one magnetic material layer is a thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

3. The data storage card of claim 1 wherein said at least one layer of magnetic material is form of nickel-cobalt.

4. (Amended) The data storage card of claim 1 wherein said at [lest] least one layer of magnetic material is form of plated nickel-cobalt.

5. (Amended) The data storage card of claim 1 wherein said at [lest] least one layer of magnetic material is form of sputtered nickel-cobalt.

6. (Amended) The data storage card of claim 1 wherein said substrate is moved relative to [said] a data processing station.

7. (Amended) The data storage card of claim 1 wherein [said] a data processing station is moved relative to said substrate.

8. (Amended) The data storage card of claim 1 wherein [said] a data processing station and said substrate are moved relative to each other.

9. (Amended) The data storage card of claim 1 wherein said substrate is substantially planar and generally rectangular in shape and said data [storage device] surface region is generally rectangular in shape.

10. (Amended) The data storage card of claim 9 wherein said substantially planar and generally rectangular shaped substrate including said data [storage device] surface region is transported past a data processing station.

11. (Amended) A portable data storage card adapted to be used in a card processing system having a data processing station comprising

a data storage device adapted to interact with a data processing station when a portable data storage card and a data processing station are moved relative to each other, said data storage device including

a glass substrate having a predetermined shape; and

at least one layer of high density, high coercivity magnetic material for storing magnetic signals, said data storage device being configured to be used in an environment wherein particles and debris may become affixed to the surface region of said data storage device and said surface region is capable of having such particles and debris removed therefrom prior to said portable data storage card and a data processing station being moved relative to each other.

12. The portable data storage card of claim 11 wherein said at least one magnetic material layer is a thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

13. (Amended) The portable data storage card of claim 11 wherein said substrate has two surfaces and [said] a protective coating is applied to at least one of said two surfaces for resisting abrasion during use in an environment wherein particles and debris may become affixed to a surface having said protective coating applied thereto to enable removal of such particles and debris therefrom prior to said portable data storage card and a data processing station being moved relative to each other.

14. (Amended) The portable data storage card of claim 11 wherein said substrate has two surfaces and [said protective coating is applied to at least one of said two surfaces and] wherein said data storage device is located on the other of said two surfaces and [said] a protective coating is applied to at least said data storage device for resisting abrasion during use in an environment wherein particles and debris may become affixed to a surface having said protective coating applied

thereto to enable removal of such particles and debris therefrom prior to said portable data storage card and a data processing station being moved relative to each other.

15. (Amended) The portable data storage card of claim 11 wherein [said] a protective coating is [adapted] applied to at least said data storage device to resist abrasion during use in an environment wherein particles and debris may become affixed to a surface having said protective coating applied thereto to enable removal of such particles and debris therefrom prior to said portable data card [interface] interfacing with and be responsive to a data processing station when said substrate and data processing station are moved relative to each other to position said substrate proximate said data processing station to enable data flow therebetween.

16. The portable data storage card of claim 11 wherein said substrate is moved relative to said data processing station.

17. The portable data storage card of claim 11 wherein said data processing station is moved relative to said substrate.

18. The portable data storage card of claim 11 wherein said data processing station and said substrate are moved relative to each other.

19. The portable data storage card of claim 11 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally rectangular in shape.

20. The portable data storage card of claim 19 wherein said substantially planar and generally rectangular shaped substrate including said data storage device is transported past a data processing station.

21. (Amended) The portable card of claim 11 wherein said at least one [thin film] layer of high density, high coercivity magnetic material is a sputtered layer.

22. (Amended) The portable card of claim 11 wherein said at least one [thin film] layer of high density, high coercivity magnetic material is a platted layer.

23. (Amended) The portable card of claim 11 wherein said at least one [thin film] layer of high density, high coercivity magnetic material is an oxide layer.

24. (Amended) The portable card of claim 11 wherein said at least one [thin film] layer of high density, high coercivity magnetic material is a web coated layer.

25. (Amended) A card and card writer/reader system comprising

an encodeable card having

a body having upper and lower surfaces and side and end edges, said body including on at least one of said upper and lower surfaces a data storage section, said card being adapted to interact with a data processing station having a transducer when said card and said data processing station are moved relative to each other to at least one of write encoding signals in said data storage section and read encoded signals from said data storage section, said data storage section including

a glass substrate; and

at least one layer of high density storage material for storing data, said at least one layer of high density storage material being configured to be used in an environment wherein particles and debris may become affixed thereto and said at least one layer of high density storage material is capable of having such particles and debris removed therefrom.

26. The card and card writer/reader system of claim 25 wherein said an encodeable card is a magnetically encodeable card and wherein said data

storage section has at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

27. The card and card reader system of claim 26 wherein said transducer is a thin film head.

28. (Amended) A card and card writer/reader system comprising

a magnetically encodeable card having

a body having upper and lower surfaces and side and end edges, said body including on at least one of said upper and lower surfaces a data storage device adapted to interact with a data processing station when said card and said data processing station are moved relative to each other, said data storage device including at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data, said data storage device region being configured to have a surface region which may be used in an environment wherein particles and debris may become affixed to the surface region and data storage device is capable of having such particles and debris removed therefrom;

a first transducer for reading said magnetically encoded signals from said data storage device during relative movement of said card relative to the data processing station to enable data flow between said data storage device and said transducer; and

a second transducer for writing magnetically encoding signals in said data storage device as magnetically encoded signals during relative movement of said card relative to the data processing station to enable data flow between said data storage device and said transducer.

29. The card and card writer/reader system of claim 28 wherein said transducer is an inductive head.

30. The card and card writer/reader system of claim 28 wherein said transducer is a thin film magnetic head.

31. (Amended) A method for reading a card with a card reader comprising the steps of

forming on a glass substrate of a card a data storage section having a data surface region comprising a magnetic storage medium having at least one layer of high density, high coercivity magnetic material for storing magnetic signals adapted to interact with a data processing station when said

card and said data processing station are moved relative to each other to at least one of write encoding signals in said data storage section as encoded signals and read encoded signals from said data storage section ,said data storage section being configured to be used in an environment wherein particles and debris may become affixed to the data surface region and said data storage section is capable of having such particles and debris removed therefrom; and

moving said card and data processing station relative to each other to interface said data storage section relative to a transducer to enable data flow therebetween.

32. The method of claim 31 wherein the step of forming includes forming a data storage device having at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

33. The method of claim 32 wherein said step of moving includes using a transducer that is an inductive head.

34. The method of claim 32 wherein said step of moving includes using a transducer that is a thin film head.

35. (Amended) A method for reading a card with a card reader comprising the steps of

forming on a glass substrate of a card a data storage section including a thin film of magnetic material having a predetermined magnetic orientation for storing data in a predetermined axis, said data storage section being configured to be used in an environment wherein particles and debris may become affixed thereto and said data storage section is capable of having such particles and debris removed therefrom; and

moving said card and data processing station relative to each other to interface said data storage section relative to a transducer to enable data flow therebetween.

36. (Amended) A data storage device comprising

a glass substrate;

at least one layer of high density, high coercivity magnetic material formed on said glass substrate for storing data; and

a non-magnetic layer formed on said magnetic layer, said at least one layer of non-magnetic material being configured to be used in an environment wherein particles and debris may become affixed thereto and said data storage device is capable of having such particles and debris removed therefrom.

37. (Amended) A data storage device comprising

a glass substrate;

a substrate having at least one surface;

at least one high density magnetic material layer disposed on said substrate for storing magnetic signals with the coercive material axis of magnetization oriented in a predetermined direction relative to said at least one surface of said substrate, said at least one high density magnetic material layer being configured to be used in an environment wherein particles and debris may become affixed thereto and said data storage device is capable of having such particles and debris removed therefrom.

38. (Amended) A magnetic signal processing apparatus comprising

a magnetic recording medium having

a glass substrate;

a high density magnetically coercive material for storing magnetic signals with the coercive material axes of magnetization oriented in a predetermined direction; and

a non-magnetic layer formed on said [magnetic layer.] magnetically coercive material, said at least one layer of non-magnetic material being configured to be used in an environment wherein particles and debris may become affixed thereto and said magnetic recording medium is capable of having such particles and debris removed therefrom;

a magnetic transducer positioned relative to a surface of said recording medium for transferring signals with respect to the recording medium; and

a drive member operatively coupled to at least one of said transducer and said recording medium to provide relative movement therebetween.

39. (Amended) [In a] A method of processing magnetic signals using a magnetic recording medium having a high density magnetically coercive material for storing magnetic signals with the coercive material axes of magnetization oriented in a predetermined direction comprising the steps of:

providing a glass substrate for supporting said [a] high density magnetically coercive material;

providing on said [a] glass [material] substrate a layer of high density magnetic material; and

providing a non-magnetic layer of material on said magnetic layer of material, said non-magnetic layer of material being configured to be used in an environment wherein particles and debris may become affixed thereto and said non-magnetic layer of material is capable of having such particles and debris removed therefrom.

40. (Amended) A system comprising

a magnetic recording medium having

a glass substrate;

a high density magnetically coercive material for storing magnetic signals formed on said glass substrate with the coercive material axes of magnetization oriented in a predetermined direction:

a non-magnetic material disposed on said high density magnetically coercive material, said non-magnetic material being configured to be used in an environment wherein particles and debris may become affixed thereto and said non-magnetic layer of

material is capable of having such particles and debris removed therefrom; and

a drive member operatively coupled to at least one of [said] a transducer and said recording medium to provide relative movement therebetween.

Please add the following new claims 41 through 55:

41. A data storage card adapted to be used in a card processing system having a data processing station, said data storage card comprising

a data storage device adapted to interact with a data processing station when a portable card and a data processing station are rotationally moved relative to each other, said data storage device including

a substrate formed of a non-magnetic material having a predetermined shape; and

at least one layer of magnetic material for storing magnetic signals, said at least one layer of non-magnetic material being configured to be used in an environment wherein

particles and debris may become affixed thereto and said non-magnetic layer of material is capable of having such particles and debris removed therefrom.

42. The data storage card of claim 41 wherein said at least one magnetic material layer is a thin film layer of high density, magnetic material having a predetermined magnetic field orientation for storing data.

43. The data storage card of claim 41 wherein said substrate non-magnetic material is selected from the group consisting of a glass substrate, a glass-ceramic substrate, crystallized glass substrate, an aluminum substrate, a ceramic substrate, a carbon substrate, a silicon substrate and a resin substrate.

44. The data storage card of claim 41 wherein said data storage card and said data processing station are moved relative to each other along a first path.

45. The data storage card of claim 42 wherein said first path is a substantially straight path.

46. The data storage card of claim 42 wherein said first path is a substantially curved path.

47. The data storage card of claim 41 wherein said data storage card and said data processing station are moved relative to each other along a substantially arcuate path.

48. The data storage card of claim 41 wherein said data storage card and said data processing station are rotated relative to each other along a substantially arcuate path.

49. The data storage card of claim 41 wherein said data storage card is rotated relative to said data processing station.

50. The data storage card of claim 41 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally rectangular in shape.

51. The data storage card of claim 41 wherein said substrate is substantially planar and generally rectangular shaped substrate and said data storage device is rotated relative to a data processing station.

52. The data storage card of claim 51 wherein said substantially planar and generally rectangular shaped substrate

including said data storage device are rotatable proximate a data processing station.

53. A method for reading a card with a card reader comprising the steps of

forming on a substrate of a card a data storage section wherein said data storage section has a surface region which is configured to be used in an environment wherein particles and debris may become affixed to the surface section and said data storage section is capable of having such particles and debris removed from the surface region and wherein at least one of said card and said data storage section is adapted to be rotated about its central axis relative to a data processing station to at least one of write encoding signals in said data storage section as encoded signals and read encoded signals from said data storage section; and

rotating said at least one of said card and said data storage section about its central axis to position said data storage section relative to said data processing station to interface said data storage section relative to a transducer to enable data flow therebetween.

54. The method of claim 53 wherein said step of rotating includes moving a transducer relative to the data storage section.

55. A method for reading a card having a generally rectangular shape with a card reader comprising the steps of

forming on a substrate of a card a data storage section including a layer of magnetic material having a predetermined magnetic orientation for storing data in a predetermined axis, said data storage section having a surface region which is configured to be used in an environment wherein particles and debris may become affixed to the surface section; and

rotating at least one of said card and said a data storage section about its central axis relative to a data processing station to interface said data storage section relative to a transducer to enable data flow therebetween.

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